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Behold, der Mann: Survey of Paleoanthropological Discoveries in German-Speaking Nations

1. Introduction

The German world, with its turbulent and important history from almost 600,000 years ago to this day, is immensely important to the study of humankind; from then and now. Fossils allow us a glimpse at the early inhabitants of Europe and Germany; tools allow us to see how our ancestors would have survived; and art allows us to see the symbolic capabilities of our ancestors.

2. Fossils and Tools

Understanding and researching human prehistory is difficult due to the sheer volume of information. Moreover, there are few tools to examine said prehistory, with dental, isotopic, and mitochondrial analysis being some of the more recent tools. Early tools to examine prehistory would have been fossil analysis, stratigraphy, and comparative anatomy.

2.1. Neandertal 1

Neandertal 1 are a set of bones belonging to an extinct species of hominins now known as *Homo sapiens neandertalensis*. This was not the first Neandertal found, nor the first Neandertal discovered in the German world, but it was the first fossil to be named as Neandertal. After being discovered in 1856, the fossil was promptly given to local German teacher and naturalist Johann Carl Fuhlrott. Fuhlrott, along with German anatomist Hermann Schaaffhausen, published a joint

paper in 1857 in a German society for natural history posited that the skull belonged to a new species related to humans (Schaaffhausen, 1857). Their views were the subject of intense scholarly debate. At the time, the biological sciences were dominated by German cellular biologist Rudolf Virchow, who despised the theory of evolution and claimed Neandertal 1 was a human with a serious deformation (Glick, 1988).

In 1863, geologist William King suggested flippantly at a meeting with the British Association the name *Homo neandertalensis* for the species described by Fuhlrott and Schaaffhausen, later formally suggesting that same name in 1864 in a paper for the Quarterly Journal for Science (King, 1864). Central to Darwin's theory of evolution was the concept of extinction, a concept which was a controversial topic for much of his life. It was Georges Cuvier who first formulated an idea of modern extinction, though he himself was against the idea of evolution. Schaaffhausen as well was a proponent of the theory of extinction years before he discovered the fossil. Neandertal 1 not only was a fossil of a creature man-like and ape-like, but it was a fossil of a creature that had never been seen before, at once indicating it was an ancestor of mankind and an extinct species. Schaaffhausen's analysis combined both Cuvier's theory of extinction and the as-of-yet formed theory of human evolution. With Schaaffhausen's analysis, the field of paleoanthropology was born. Four years after Schaaffhausen's paper was written, in 1861, Charles Darwin published *On the Origin of Species*. In the third edition, Darwin includes Schaaffhausen in the preface (Darwin, 1861).

In 1997, a small bone sample from Neandertal 1 was ground up and analyzed (Krings et al, 1997). By analyzing mitochondrial DNA (mtDNA) from the sample, it was discovered that *H. neandertalensis* and *H. Sapiens* differed in their mtDNA sequence by 27.2 ± 2.2 substitutions (1997, p. 24). For comparison, the average human's mtDNA sequence differs from a

chimpanzee's by about 55.0 substitutions ("Neanderthal Mitochondrial and Nuclear DNA"). If it were not for Neandertal 1 and the efforts of Fuhlrott, Schaaffhausen, and King, this sequencing would likely not have happened.

2.2. Mauer 1

The oldest hominin fossil in Germany is the mandible of a *Homo heidelbergensis*, discovered in 1908 by Daniel Hartmann, a miner at the Grafenrain sand mine. Hartmann passed the fossil to Otto Schoetensack, a German professor of anthropology, who had been watching the site for twenty years. The mandible was titled by Schoetensack "Mauer 1" after the village it was found in, 10 kilometers southeast of Heidelberg. Schoetensack immediately wrote *Der Unterkiefer des Homo Heidelbergensis aus den Sanden von Mauer bei Heidelberg* in which he documented the find and described the species as being distantly related to humankind, writing: "[The fossil] shows a combination of features, that has been previously found neither on a recent nor on a fossilized human mandible. Even the scholar should not be blamed if he would only reluctantly accept [the fossil] as human" (Schoetensack, 1907). Using radiometric dating, the National Academy of Sciences estimated the mandible was 600,000 years old, with an inaccuracy of about 40,000 years (Wagner, 2010). This proved Schoetensack's hypothesis of the specimen being older than the Neandertals as being correct, as this would have been 300,000 years before the first Neandertals (Schoetensack, 1907). *H. heidelbergensis* represents the possible transitional fossil between *H. erectus* and *H. s. neandertalensis*.

2.3. Schöningen Spears

H. heidelbergensis, as well as many of its ancestors, was a toolmaker. It is thought that *H. heidelbergensis* was the first to begin relying on hunting large fauna, a practice that would be continued with the Neandertals hundreds of thousands of years later ("Homo Heidelbergensis").

To this end, *H. heidelbergensis* began producing very sophisticated hunting weapons. Of these archaic weapons that were produced, the Schöningen spears are the most sophisticated.

The Schöningen spears are a set of hunting spears, ranging in length from 6 to 7 feet (Bierstedt 2011). They were discovered in the middle of 1995 during an excavation in an opencast coal mine in Schöningen (8). The center of gravity for the spears are the front thirds of the shafts, leading towards the base (9). Because of this, these spears would have been used as javelins, or throwing spears (9). Not only is this the oldest completely preserved set of hunting weapons in the world, but they're also the oldest set of ranged weapons (9).

Alongside the spears were hundreds of animal bones. Most of the bones accumulated at the site were of the extinct *Equus mosbachensis*, a large horse indigenous to Pleistocene-era Central Europe (Starkovich 154). It was originally thought that these horses were of a single mass-killing of a herd, but dental and isotopic studies showed they were killed at different times of the year (154).

When the human primates are compared to other primates, it's evident that we are very weak (Vergano, 2014). Over the course of our evolutionary history, our brawn has disappeared in favor of our brains. We evolved these weak muscles even before we evolved our modern brain. To compensate, our ancestors had to improvise. This improvisation proved vital to our evolution and allowed rapid technological evolution in the form of the production of tools, especially weapons. *H. heidelbergensis* and the Schöningen spears are a preserved representation of this compensation.

3. Art and Music

Germany and the German-speaking nations have much in the way of prehistoric art. The Swabian Jura alone contains some of the oldest pieces of art in the world. This is important, as

the creation of art would have been an indication of symbolic thought in early anatomically modern humans (AMH), which is vital to understanding human evolution. Although it is not known exactly what purpose some of these pieces of art served, their existence alone says quite a bit about humankind and its cognitive ability.

3.1. Der Löwenmensch

Der Löwenmensch is an ivory sculpture, 31.1 cm in size, that was found in the Hohlenstein-Stadel cave in the Swabian Jura in Germany (“Der Löwenmensch”). The figure is humanoid from the neck down, but its head is that of a cave lion. It was discovered in 1939 during excavations undertaken by Robert Wetzel. Before the excavation could finish, just a week into the dig, World War II began. Wetzel and his team filled the trenches with soil and fled the site (Lobell). What the team could scavenge was sent to the City Museum of Ulm, hid in the very back of the storage room.

In 1969, archaeologist Joachim Hahn was commissioned to inventory the City Museum (“Der Löwenmensch”). Days before Christmas, Hahn found a box labeled Ho-St. 25.8.39. Also on the box was the exact location of the discovery: On the right wall, 27 meters behind the entrance, 100-120 cm in depth. Upon opening it, Hahn found a disorganized mess of ivory, bone, and antler. With some friends, he assembled the 30 cm Löwenmensch, but with only fragments of the head. It wasn’t until 1982 did the Löwenmensch’s head get finished, when paleontologist Elisabeth Schmidt pieced several parts of it together after receiving artifacts that an excavation worker had secured from the site after the war started. It was the realization that the figurine had what appeared to be a snout and short, cat-like ears that caused researchers to dub it the Löwenmensch – the Lion-Man. The Löwenmensch would later be carbon-dated to 35-40,000 years old.

3.2. *Vogelherd Figurines*

In 1931, archaeologist Gustav Riek excavated the Vogelherd Cave in the Swabian Jura (“Vogelherd Cave”). He discovered several well-preserved, sterile, and separated strata ranging from the Upper Acheulean to the Neolithic, from roughly 130,000 to 10,000 BCE. It was layer IV – what Riek called the Upper Aurignacian – in which extensive excavations were carried out, with 1,729 stone artifacts and 82 organic artifacts being documented by Riek’s excavation report.

Among those artifacts were several well-preserved figurines: Mammoths, lions, cave bears, wolves, wild horses, and wild cows. One figurine, a mammoth, is dated to 35,000 years, and is one of the most well-preserved and oldest pieces of figurative art in the world, next to the Löwenmensch and the Venus of Hohle Fels (“Vogelherd Cave”). On all these figurines are crosshatches, or x-like marks. There is no indication as to what these crosshatches may have been for, but theories range from an artistic signature to vital points of an animal to boredom to mapping important locations on an abstract map.

3.3. *Venusian Figurines*

Throughout prehistoric Europe, not just limited to the German world, are figurines of women with exaggerated features. These figurines are known as Venusian figurines. They are widely geographically distributed, with artifacts found in eastern Russia and western France, and are also widely temporally distributed, dating from 35,000 BCE to 11,000 BCE (“Venus Timeline”).

The oldest of the Venus figurines is the Venus of Hohle Fels. Discovered in 2008 during an excavation in the Swabian Jura, it was carbon dated to 35,000 BCE, making it one of the oldest pieces of figurative art in the world, next to the Vogelherd mammoth and the Löwenmensch (Universitaet Tuebingen). It is 2.4 inches tall and was carved from mammoth

ivory. The Venus of Hohle Fels, like most Venusian figurines, has exaggerated features including large breasts, large buttocks, and a large belly. Also like most Venusian figurines, the Venus of Hohle Fels lacks a face. This Venusian figurine is older than the second oldest Venusian figurine by over five-thousand years.

A similar figure to the Venus of Hohle Fels is the Venus of Willendorf, radiocarbon dated to 30,000 BCE (“The Venus of Willendorf”). The Venus of Willendorf also has exaggerated breasts, a large belly, and large buttocks. Unlike the Venus of Hohle Fels, however, the Venus of Willendorf has visible genitalia. The Venus of Willendorf was uncovered in 1908 by a worker named Johann Veran during an archaeological excavation. Although the site was known to be a hotspot for Paleolithic artifacts, the impetus for the largescale excavation was the introduction of a railroad. For the railroad to be constructed, the site had to be dug up, which prompted archaeologists to flock to the area.

The Venus of Galgenberg, dated to 30,000 BCE, is a Venusian figurine unlike prior Venusian figurines (“The Venus of Galgenberg”). The Venus of Galgenberg is 7.2 cm tall and was carved from green serpentine rock, of which a quarry was found nearby the Venus. The Venus is two-dimensional rather than three-dimensional, as prior Venusian figurines were. A noteworthy aspect of this Venus is the fact it is not heavyset. Its breasts, belly, and buttocks are not exaggerated. Also of note is that the Venus looks like it is in a dancing pose; this pose led it to be initially called the Fanny of Galgenberg, after Austrian dancer Fanny Elssler.

3.4. Flute of Hohle Fels

Inside the same cave in which the Venus of Hohle Fels was found, another archaeological discovery was made. In 2008, within the cave of Hohle Fels in the Swabian Jura, fragments of bones were found and pieced together shortly after, forming what was later realized to be an

archaic flute (Conard). Along the length on the top of the flute are four holes deliberately carved into the bone. They are covered perfectly by fingertips. The flute itself is 21.8 cm in length and 8 mm in diameter, and was carbon dated to 35,000 years ago, making it the oldest undisputed musical instrument in the world.

The instrument was made from an avian bone, specifically a griffon vulture. The benefit of using avian bones is that they are hollow, so hollowing the bone out manually was not required. The griffon vulture has one of the largest wingspans, which would have made perfect flutes. The flute has approximately two or three inches missing, based on the average bone size of a griffon vulture. When played, the bone flute of Hohle Fels has a harmony of notes like a modern flute (“Stone Age Flutes”). At one end of the flute are two large, v-shaped notches, where the prehistoric musician would have blown into to produce notes.

4. Conclusion

These finds are tens of thousands of years old now and show the deep history of humankind. The fossils showcase the physical evolution of the human species, from the human split from Neandertals to the first European hominin, and the art showcases the symbolic revolution of the human mind. There is no way for us to know what our prehistoric ancestors were thinking when they carved a piece of stone into the shape of a woman, or when they modeled a man with a lion for a head, or when they created dozens of figurines in the shapes of various animals in the same location over thousands of years, and we will likely never know. Perhaps the Venusian figurines represent a mother goddess, or a religious fetish, or a fertility aid, or a self-portrait. Perhaps the cross-hatching on the Vogelherd figurines represent an artist’s signature, or vital spots on an animal, or an abstract map to important locations.

Even though we will never know what our ancestors were thinking when they did these things, their doing of it in of itself allows us to understand our roots. Humans were not always humans. We are the products of evolution, as is every other living organism on the planet. We had to face change, adversity, extinction, and hardships before we succeeded.

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